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The economics of COVID-19: Initial empirical evidence on how family firms in five European countries cope with the corona crisis

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Abstract

Purpose – Within a very short period of time, the worldwide pandemic triggered by the coronavirus has not only claimed numerous lives, but also caused severe limitations to daily private as well as business life. Just about every company has been affected in one way or another. This first empirical study on the effects of the COVID-19 crisis on family firms allows initial conclusions to be drawn about family firm crisis management.

Design/methodology/approach – Exploratory qualitative research design based on 27 semi-structured interviews with key informants of family firms of all sizes in five Western European countries that are in different stages of the crisis.

Findings – The COVID-19 crisis represents a new type and quality of challenge for companies. These companies are applying measures that can be assigned to three different strategies to adapt to the crisis in the short term, and emerge from it stronger in the long run. In addition, the findings show how companies in all industries and of all sizes adapt their business models to changing environmental conditions within a short period of time. Finally, the findings also show that the crisis is bringing about a significant yet unintended cultural change. On the one hand, a stronger solidarity and cohesion within the company was observed, while on the other hand, the crisis has led to a tentative digitalization.

Originality/value – To the knowledge of the authors, this is the first empirical study in the management realm on the impacts of COVID-19 on (family) firms. It provides cross-national evidence of family firms' current reactions to the crisis.

Keywords – Corona, COVID-19, Crisis Management, Family Firms, Strategic Management, Business Model Adaptation.

Paper type – Research paper

Introduction

On March 11th, 2020, the World Health Organization (WHO) declared a pandemic of the highly transmissible coronavirus disease (WHO, 2020) COVID-19, signaling its global spread. Since then, the rapid worldwide outbreak of the novel coronavirus has triggered an alarming global health crisis. Many countries' governments have taken measures dramatically affecting the daily life of society. To slow down the transmission and spread of the coronavirus, the public health tactic of "social distancing" has been widely applied. Regions and even countries have been entirely locked down (ranging from contact limitations to full curfew); schools, universities and public facilities are shut down; and public events (including sports matches, concerts, and even marriages) are currently prohibited in most countries.

These measures not only affect the populations' daily life, but have caused significant economic consequences in economies around the world. Stock markets have crashed dramatically (Baker *et al.*, 2020), with economists consistently forecasting harsh economic recessions (Baldwin and Weder di Mauro, 2020; McKibbin and Fernando, 2020). Governments have set severe restrictions on firms in various industries, mandated social distancing and health protection policies, and even locked down non-essential businesses in many countries, triggering simultaneous demand as well as supply side issues (del Rio-Chanona et al., 2020). Whereas demand in industries such as healthcare has skyrocketed, demand in industries such as restaurants, air transportation, and tourism has evaporated. General buying power and consumption in private households have also been affected (Muellbauer, 2020). In just one month, 22 million people in the USA lost their jobs, unemployment rates more than doubled in Austria, and 29% of all Swiss employees have been placed on short-term furlough (*Kurzarbeit*) due to the crisis. Decreasing consumer demand and spending may even worsen throughout 2020 with upcoming corporate layoffs and bankruptcies in many affected sectors.

At the same time, many industries face supply-side issues, as governments curtail the activities of non-essential industries and workers are confined to their homes. Businesses here need to contend with a number of challenges, including the implementation of required health protection measures, reduced production and demand, supply chain disruptions, etc. This situation calls for academic research providing firms with valid strategies on how to cope with the challenges of the COVID-19 crisis.

This study explores how and by what means family firms are responding to the COVID-19 crisis. The majority of business worldwide are family firms, which – depending on the

definition applied – comprise approximately 90% of all companies in the countries investigated for this study (e.g., Xi et al., 2015). Given their omnipresence in the business landscape, family firms' roles in the economy as employers, wealth creators, and innovators are significant (Filser et al., 2016).

Family firms are typically vulnerable due to their autonomous, family-oriented standing (Gómez-Mejía et al., 2007; Lee, 2006) and their constrained financial capital and resources (Kim and Vonortas, 2014; Sirmon and Hitt, 2003). Moreover, a crisis typically hits the owners of family firms twice, i.e. once as private citizens and in a second round as business owners (Runyan, 2006). Since the family firm represents the family's legacy, the effective management of crises is critical for family firms, including family SMEs because their socioemotional endowment is at stake (Gomez-Mejia et al., 2011). In addition, family firms show certain particularities regarding their behaviors and measures during crises. It has been shown that increased family ownership reduces the likelihood that firms follow formal crisis procedures (Faghfour et al., 2015) and that the emotional attachment of the family affects the performance of family firms during a crisis (Arrondo-García et al., 2016). Family firms sacrifice short-term performance and shareholder value for long-term survival (Lins *et al.*, 2013; Minichilli et al., 2016) and thus may also utilize specific measures in response to crises. Furthermore, family firms usually behave more responsibly towards their employees as well as the environment, and closely align decisions with the values and non-economic goals of the firm (Chrisman et al., 2005; Dyer Jr and Whetten, 2006). And due to their particular ownership structures, family firms can make rapid decisions and respond to changes quickly and non-bureaucratically (Carney, 2005).

The practical relevance of family firms and their strategic responses to the COVID-19 crisis for this research becomes evident when considering the many examples of family firms receiving recent media¹ coverage. The German manufacturer of household and commercial appliances Miele has scaled down production, decreased operations to minimal levels, and implemented decreased working hours as of the beginning of April. The company's supply chain has suffered from a massive disruption, with the company no longer able to acquire parts, and unable to sell their products with retail outlets being closed. The Austrian family-owned dairy Woerle has attempted to maintain its production to meet the increased demand for cheese products while facing new hygiene restrictions and guidelines. Woerle as a result reorganized its production, with its operations working day and night, and its employees wearing protective masks. The German family-owned developer and producer of microphones and headphones

Sennheiser has taken measures in production and marketing to preserve and maintain their business relations and activities, including a minimum level of productivity. Production is now reorganized into two separately working shifts, working from home has been implemented as much as possible, stores have been temporarily closed, and doing business with them is only possible on their website. The global Swiss-based logistics company Kühne + Nagel International AG has been following its business continuity plans to not only protect their employees' health and safety, but also to ensure uninterrupted service for its clients. Fiat Chrysler Automobiles (FCA), part of the Italian multi-industry business dynasty founded by Giovanni Agnelli, rapidly announced intensive measures to help fight the spread of COVID-19 in Italy. The official March 11th, 2020 announcement included the immediate temporary closure of its production plants across the country; intensive sanitization of all work and rest areas, changing rooms and washrooms; as well as a progressive implementation of "smart working" (from home) to "limit social contact as much as possible." Other examples saw family firms' more creative responses to the crisis. The Italian family-led Giorgio Armani Group; the German family-led lingerie manufacturer Mey; Trigema, Germany's largest manufacturer of sports and leisurewear; and the Melitta Group, known for the production of coffee filters and vacuum cleaner bags, all have redeployed manufacturing resources to the production of medical overalls and face protection masks.

Despite the academic and managerial relevance of crisis management strategies in general, and ways to deal with the COVID-19 crisis in particular, no previous academic studies have investigated how and by what means family firms are responding to the COVID-19 crisis. In general, only very few studies have investigated how family firms manage and overcome crises (for exceptions see Cater and Schwab, 2008; Herbane, 2013; Kraus et al., 2013; Faghfour et al., 2015). The speed with which the COVID-19 crisis has erupted, the immediate health hazards for all economic actors, and the strict governmental restrictions around it create a unique situation that to date has not been investigated in family business research.

Against this background, the following attempts to provide the first initial real-time "snapshot" evidence of how family firms in five Western European countries (Austria, Germany, Italy, Liechtenstein, and Switzerland) have responded to the COVID-19 crisis. To our knowledge, it is the first empirical study that addresses the consequences and coping mechanisms of businesses in the COVID-19 crisis. We further attempt to generate more generalizable knowledge about how family firms react and adapt in an unexpected general crisis situation.

The study contributes to the strategic and crisis management of family firms during the COVID-19 crisis, and proposes a model for changes during a crisis for short-term adaption and long-term firm positioning. The paper further contributes to family firm research and shows how these companies cope with a lockdown situation. Finally, the paper contributes to innovation and digitalization research by providing insights into how external shocks may trigger firms' innovation and digitalization processes.

Situation overview: The COVID-19 crisis

The origin of the COVID-19 crisis and its spread from China to Europe

In December 2019, numerous pneumonia cases in Wuhan (in the Hubei Province of China) could not be attributed to any known cause (WHO, 2020). The outbreak of the pathogen was localized to a regional seafood market in Wuhan, which was closed by local authorities on January 1st, 2020 (Huang *et al.*, 2020; Zhu *et al.*, 2020), immediately after their declaration of an epidemiological alert. At that time, 41 people were already infected (Huang *et al.*, 2020). First investigations concluded that the diseases were caused by a novel virus that can be transmitted person-to-person (Chan *et al.*, 2020).

On January 21st, 2020, the WHO published its first situation report on the novel coronavirus, outlining 282 confirmed cases in four countries including China (278 cases), Thailand (2 cases), Japan (1 case), and the Republic of Korea (1 case) (WHO, 2020).

On January 25th, 2020, the first European cases of the novel coronavirus were published in the WHO's fifth report (WHO, 2020). Subsequently, on January 30th, 2020, after an increased spread of the virus in China and its appearance in other parts of the world, the newly-created emergency committee declared the new coronavirus a public health emergency of international concern (WHO, 2020), as local viral outbreaks could quickly spread worldwide in light of today's international mobility (Cohen, 2000). At that time, 9,826 cases in 20 countries were confirmed, including 14 cases in Europe (WHO, 2020).

On March 11th, 2020, 118,319 cases had been confirmed worldwide, and the WHO director-general declared the disease COVID-19 a "pandemic" (WHO, 2020), i.e. a worldwide epidemic affecting vast numbers of people across borders (Last *et al.*, 2001).

Government actions to mitigate the risks of the COVID-19 pandemic

The declaration of COVID-19 as a pandemic clearly emphasized the severe global threat of the virus. Table 1 provides an overview of confirmed deaths worldwide for COVID-19, along with other infectious diseases. As this disease was the first global threat since the 1918-1919 outbreak of H1N1 influenza (for which no vaccine or treatment existed (Ferguson *et al.*, 2020)), COVID-19 required government action based on mitigation or suppression strategies.

When	Epidemic	Deaths
14 th Century	Bubonic plague	25 million
1918-1920	Spanish flu	50 million or more
1981-ongoing	AIDS	>25 million
2002-2004	SARS	774
2009	Avian flu	151,000-575,000
2014-2016	Ebola	>11.000
2020	Corona/COVID-19	185,500 (as of April 23 rd , 2020) (Johns Hopkins University)

Table 1: Overview of historical diseases (Baldwin and Weder di Mauro, 2020, adapted).

Mitigation seeks to slow down the spread of a disease and build up herd immunity throughout the population. *Suppression* tries to decrease the reproduction number to <1 through the implementation of restrictions until the pathogen can be controlled. However, developing a vaccine takes time (Ferguson *et al.*, 2020); although mitigation and suppression can help to reduce the spread of something like the new coronavirus, both strategies require drastic restrictions with severe impacts on social life and the economy (Anderson *et al.*, 2020). Ferguson *et al.* (2020) modeled the impact of mitigation and suppression strategies on high-income economies, outlining the importance of five non-pharmaceutical interventions, including case isolation at home, voluntary quarantine, social distancing of risk groups, general social distancing, and lockdown of schools and universities. Their results show that, regardless of the chosen strategy (i.e. suppression or mitigation), multiple non-pharmaceutical interventions are necessary to reduce the risk to the health care system posed by the spread of the virus.

The steep increase in infections and the high reproduction numbers in Europe (particularly in Italy and Spain) have led governments to implement strict measures to prevent the

uncontrolled spread of COVID-19. European governments primarily followed the recommendations of public health agencies regarding mitigation measures (Baekkeskov and Rubin, 2014). These efforts generally aim at keeping the infection “curve” as flat as possible to avoid overloading the capacities of the health care system (Lau *et al.*, 2019). It had already been demonstrated e.g. in China that strict contact restrictions can significantly reduce the number of infections. Their strict curfew, especially in strongly affected regions, has led to a significant flattening of the infection curve (WHO, 2020).

Governments imposed social distancing measures to achieve this goal in Europe (Fenichel, 2013; Ferguson *et al.*, 2020; Nigmatulina and Larson, 2009). These measures aim to reduce avoidable social contacts as much as possible to prevent a rapid spread of the coronavirus. They are only regarded as cost-effective for severe pandemics (Pasquini-Descomps *et al.*, 2017). Table 2 provides an overview of the non-pharmaceutical interventions the investigated countries took to prevent the spread of COVID-19.

	Austria	Germany	Italy	Liechtenstein	Switzerland
Case isolation at home	yes	yes	yes	yes	yes
Voluntary quarantine	yes	yes	yes	yes	yes
Social distancing of risk groups	yes	yes	yes	yes	yes
General social distancing	yes	yes	yes	yes	yes
Lockdown of schools and universities	yes	yes	yes	yes	yes
Closed borders	yes	yes	yes	yes	yes
Face masks in closed rooms and public transport	yes	no	yes	no	no

Table 2: Non-pharmaceutical interventions of the countries investigated (as of April 23rd, 2020).

The economy during the COVID-19 crisis

The imposed non-pharmaceutical interventions have had a very negative impact on the economy (Anderson *et al.*, 2020; Bootsma and Ferguson, 2007; Lee *et al.*, 2012). Research on the economic impact of previous pandemics has shown that countries, industries, and companies suffer significantly from the consequences of a global pandemic. This is due to a simultaneous demand and supply shock. Demand declines because consumers reduce their purchases of non-essential goods and services such as entertainment and travel. And layoffs

reduce society's overall spending capacity (Cahyanto *et al.*, 2016, McKercher and Chon, 2004; Sadique *et al.*, 2007). Supply is thrown off course because many firms are simply not prepared to deal with the phenomenon of disrupted supply chains (Simchi-Levi *et al.*, 2014). Many service and manufacturing sectors as a result have had to shut down their operations (del Rio-Chanona *et al.*, 2020).

The COVID-19 crisis has and will have an enormous influence on businesses worldwide. Governments across Europe and the US have implemented financial first-aid and stimulus packages for businesses. While a few industries such as healthcare have faced increased demand and are actually benefiting from the crisis, many industries have been severely affected. Governmental restrictions caused the closure of restaurants and hotels, along with a very noticeable drop in revenues in the hospitality and tourism industries. In the restaurant industry, only food delivery or pickup has been allowed. The closure of leisure activities (cinemas, sports facilities, theatres, museums, etc.) has led to severe setbacks in this industry. Worldwide landing and birthing bans for aircrafts and ships have created a sharp decline in these industries.

It is already clear that the total state aid, especially in Western countries, will be at levels exceeding those of all previous crises. By April 21st, the EU and its member states had tied together rescue/stimulus packages worth €3.4 trillion. These enormous measures have been taken based on first estimates of economic development; their sums predict a significant economic downturn “shaping up as the deepest dive on record for the global economy for over 100 years” (Harvard economist Kenneth S. Rogoff in the *New York Times*).

Event	Countries, Year	Costs
Tsunami	Japan, 2011	\$235 billion
Hurricane	USA, 2005	\$81.2 billion
Earthquake	Haiti, 2010	\$8 billion
Tsunami	India, Indonesia, Sri Lanka, Thailand, 2004	\$9.5 billion
Coronavirus	Worldwide pandemic, origin in China	Tad

Table 3: Overview of natural disasters and their costs (Park *et al.*, 2013, adapted)

Theoretical foundation

Organizational crises and crisis management

Literature on organizational crisis management has taken many different directions in recent years. It ranges from different perspectives (finance, accounting, management; Hale *et al.*, 2005); strategic responses to a crisis (Baron *et al.*, 2005); and handling of employees (Harvey and Haines Iii, 2005). Some crisis literature deals with crises caused by companies (Bundy *et al.*, 2017), while other literature deals with the effects of natural disasters (Park *et al.*, 2013, Runyan, 2006). Researchers have highlighted the overall characteristics of a crisis (Runyan, 2006). These include surprising changes in a system or to its parts (Greiner, 1989), a threat to the organizations' existence (Witte, 1981), a large amount of involved stakeholders (Elliott and McGuinness, 2002), low probability of occurrence and great influence, and little time for decision-making (Hills, 1998; Pearson and Clair, 1998).

Research on the outcome of a crisis deals with different areas such as the changed relationship with stakeholders after the crisis (Coombs, 2007; Elsbach, 1994; Pfarrer *et al.*, 2008) or the adaptation and learning effects of companies and survival in crisis situations (Lampel *et al.*, 2009; Veil, 2011; D'Aveni and MacMillan, 1990). Crises don't always have only negative implications for stakeholders. Research also highlights the potential positive effects of crises and disasters. These situations help to stimulate the innovation approaches of companies and identify new markets (Faulkner, 2001). Research shows that management's view of whether the crisis is a threat or an opportunity is of particular importance regarding how managers handle the situation. Managers who primarily see a danger in crises usually react emotionally and operate with a sense of reduced opportunities in mind. On the other hand, crises can also be perceived positively and lead to a flexible and open working approach in management (Brockner and James, 2008; Dane and Pratt, 2007; James and Wooten, 2005).

In general, a crisis can be viewed from an internal and an external perspective. Three main process steps apply here: pre-crisis prevention, crisis management, and post-crisis outcomes (Bundy *et al.*, 2017). In their recent work, Wenzel *et al.* (2020) propose four strategic crisis responses, which we use as a framework for our analysis:

- 1) *Retrenchment* means that firms take measures to reduce their costs (Pearce and Robbins, 1993) and complexity (Benner and Zenger, 2016). Both positive and negative consequences can emerge from retrenchment. As a direct response to a crisis situation, cost-cutting measures have an especially positive effect on maintaining liquidity and providing a solid

foundation for long-term recovery (Pearce and Robbins, 1994). On the other hand, retrenchment strategies are often attributed to decreased performance (Barker and Duhaime, 1997). Especially in the case of long-lasting crises, this strategy ensures a change in resource use and company culture (Ndofor *et al.*, 2013).

- 2) *Persevering* focuses on maintaining the firm's ongoing operations. Stieglitz *et al.* (2016) explain the positive effects of a persevering strategy by the fact that frequent strategic changes reduce the value of a strategic renewal. Wenzel *et al.* (2020) summarize that the core of this strategy is not to start a strategic renewal at the wrong time, and that its success is linked to the duration of a crisis. The longer the crisis lasts, the scarcer the financial resources become.
- 3) *Innovating* focuses on the strategic renewal of the business. A crisis enables companies to think openly about new things (Roy *et al.*, 2018). It may even help firms overcome organizational inertia and reflect upon the viability of the business model (Ucaktürk *et al.*, 2011). As firms recognize which parts of their business model are more robust than others (i.e. certain product or service lines, particular value creation approaches, or particular revenue models, c.f. (Clauss, 2017)), opportunities for business model innovation may be identified. Research shows that business model innovation is triggered by external developments such as changes in the competitive environment (Clauss *et al.*, 2019), or new technologies (Patel and Gigli's, 2005). Wenzel *et al.* (2020) summarize that innovating is a coping strategy that has sustainable effects and may make the company stronger for the future (e.g. for situations where new ways to create revenue are needed). However, low liquidity during a crisis is noted by the authors as a limiting factor. Especially as time goes by, managers here can miss the chance to make strategic change.
- 4) *Exit* is the last possible reaction if other strategies are deemed unsuccessful. Nevertheless, a successful business exit can free up new resources (Carnahan, 2017) and create fresh opportunities. Exit in other words can lead to strategic renewal and the foundation of a new firm (Ren *et al.*, 2019).

Family firms during the COVID-19 crisis

Family ownership reduces the likelihood that firms follow formal crisis procedures (Faghfour *et al.*, 2015). Several particularities may make family firms apt to instead navigate through crises based on their focus on family, ownership, and business continuity.

Family firms usually have a long-term horizon (Miller and Le Breton-Miller, 2005), intending to pass a “clean and sustainable company onto subsequent generations” (Bauweraerts, 2013, p. 92). Consequently, family members tend to be willing to sacrifice short-term financial gains for the long-term survival of their family’s legacy (Lins *et al.*, 2013; Minichilli *et al.*, 2016). Reflecting family firms’ typical long-term orientation (Miller and Le Breton-Miller, 2005), Giovanni Agnelli, the patriarch of the Italian multi-industry business primarily known for its activities in the automotive industry, and owner of Ferrari, Lancia, Alfa Romeo, and Chrysler states, “the [family] company is an inheritance to be protected and handed on. It is the outcome of the next and each generation’s commitment to the last” (as quoted in Betts, 2001).

As a consequence of long-term family ownership, family members are typically emotionally attached to their firm (Berrone *et al.*, 2012). This may affect their performance during a crisis (Arrondo-García *et al.*, 2016). Further, they tend to build up and maintain long-term relationships with internal and external stakeholders, including their employees (Carney, 2005; Miller and Le Breton-Miller, 2005). They behave more responsibly towards their employees and their environment, closely aligning strategic decisions with their firm’s values and non-economic goals (Chrisman *et al.*, 2005; Dyer Jr and Whetten, 2006). As such, family firms focus more on the bigger picture and long-term relations and commitments than immediate, short-term outcomes. Put differently, family firms tend to be less driven by short-term goals, and give priority to the longevity of the family firm (Ward, 1997).

Family firms also tend to be able to leverage their liquidity, have lower costs of debt (Aronoff and Ward, 1995), and build on their so-called patient capital, that is, financial resources that can be invested without any threat of liquidation (Dobrzynski, 1993). As a consequence, during times like an economic downturn or a financial crisis, family firms can better mobilize their resources to maintain their activities, are more resilient (Amann and Jaussaud, 2012), and tend to financially outperform non-family firms (van Essen *et al.*, 2015; Minichilli *et al.*, 2016).

Furthermore, crisis situations come along with unexpected challenges that typically require fast and decisive strategic decision-making (Heath, 1995; Ritchie, 2004). And yet, family firms have always been particularly good at reacting quickly, decisively, and creatively (Ward, 1997) to acute situations. Stemming from family firms’ centralized decision-making and their owners’ simultaneous stock of ownership, family, and business information, procedures and processes are less complicated, and decision-makers can react quickly and discretely focus on both firm and the family interests (Tagiuri and Davis, 1996). Moreover, owning families

influence and control key decision-making processes (Carney, 2005; De Massis *et al.*, 2013), which leads to increased strategic flexibility through fewer formalizations and procedures (Carney, 2005).

In this vein, many family firms have responded decisively and quickly to the ongoing pandemic by, e.g. implementing preventative measures to mitigate contagion and safeguard their business activities for the future to the best possible extent.

Methodology

We conducted qualitative expert interviews to answer our research questions (Kvale, 1983; Neergaard and Ulhøi, 2007) and obtain an “understanding” (Outhwaite, 1975) about family firms’ reactions to the COVID-19 crisis. Qualitative research designs are particularly suitable for analyzing these kinds of organizational processes (Bluhm *et al.*, 2011; Doz, 2011; Gioia *et al.*, 2013; Graebner *et al.*, 2012). Including multiple cases allowed for a robust research approach with more generalizable findings (Eisenhardt and Graebner, 2007; Yin, 2017; Yin, 2013).

On the one hand, extensive research on crisis management exists, as seen in the literature review. On the other hand, the nature and scope of this pandemic as a specific type of crisis are unprecedented. This means that a qualitative methodology is required that can extend existing theory (Bansal and Corley, 2012; Bluhm *et al.*, 2011; Brand *et al.*, 2019; Graebner *et al.*, 2012). We built on prior research especially by adopting the retrenchment-persevering-innovation(-exit) framework by Wenzel *et al.* (2020) as a theoretical lens through which we searched for new knowledge (Jacobides, 2005). Both deductive and inductive (Denis *et al.*, 2001; Ferlie *et al.*, 2005; Pajunen, 2006), this approach between theory testing and theory generation is in the tradition of “theory elaboration” as coined by Lee *et al.* (1999) and MailTips (2005).

Employing qualitative interviews enabled us to closely capture family firm owners’ and managers’ subjective experiences during the pandemic (Graebner *et al.*, 2012). As we searched for specific and ad-hoc rather than standardized and established reactions to this crisis, the interviews added vividness, concreteness, and richness to the research phenomenon (Bluhm *et al.*, 2011; Denzin and Lincoln, 2008; Graebner *et al.*, 2012).

Sample

We employed a purposive sampling technique (Guest *et al.*, 2006; Morse *et al.*, 2002), interviewing *key informants* such as top management team members (e.g. CEOs or COOs) or the responsible area managers (Lechner *et al.*, 2006). This approach allowed for maximum variation, following the principles of appropriateness and adequacy (Gaskell, 2000; Seawright and Gerring, 2008). We were able to gain insights regarding both similarities and contrasts among the cases (Guest *et al.*, 2006). The respondents represented family firms located in Austria, Germany, Italy, Liechtenstein, and Switzerland.

As is common in qualitative research, the data analysis started directly after each interview until saturation was reached after 27 interviews, i.e. further data collection did not generate new insights (Boddy, 2016; Eisenhardt, 1989; Guest *et al.*, 2006; Morse *et al.*, 2002). Table 4 provides an overview of the respondents' and their firms' characteristics.

Respondent	Country	No. of Employees	Industry	Year of foundation	Informant's Position
R1	AT	50	Accommodation and Food Service Activities	2017	COO
R2	AT	5	Other Service Activities	2001	CEO
R3	ITA	8	Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	1975	CEO
R4	GER	1400	Manufacturing	2012	CEO
R5	GER	45	Accommodation and Food Service Activities	1949	CEO
R6	GER	3800	Manufacturing	1873	CEO
R7	ITA	100	Agriculture, Forestry and Fishing	1851	CEO
R8	GER	700	Manufacturing	1921	CEO
R9	ITA	1200	Manufacturing	1965	CEO
R10	ITA	7	Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	1984	Head of Sales
R11	GER	415	Financial and Insurance Activities	1948	CEO
R12	CH/FL	8	Financial and Insurance Activities	1995	CEO
R13	CH/FL	5	Human Health and Social Work Activities	2018	COO

R14	CH/FL	3	Human Health and Social Work Activities	2017	CEO
R15	AT	40	Manufacturing	1996	Head of Sales
R16	ITA	50	Manufacturing	1986	Head of Marketing
R17	GER	1000	Transportation and Storage	1903	CEO
R18	AT	15	Other Service Activities	1976	CEO
R19	GER	1700	Manufacturing	1984	CEO
R20	GER	200	Manufacturing	1745	CEO
R21	GER	70	Manufacturing	1958	CEO
R22	ITA	100	Manufacturing	1965	CEO
R23	ITA	331	Manufacturing	1945	Head of HR & member of the board
R24	AT	107	Other Service Activities	1964	CEO
R25	AT	12	Information Technology	2016	CEO
R26	CH/FL	8	Other Service Activities	2009	CEO
R27	AT	3	Real Estate Activities	2003	CEO

Table 4: Overview of interviewed companies

Data collection

We conducted semi-structured interviews with the respondents between March 26th and April 10th, 2020, i.e. during the current peak of the crisis in the countries under investigation. These were based on an interview guide which allowed the interviewers to spontaneously react to the respondents' statements (Eisenhardt and Graebner, 2007; Guest *et al.*, 2006; Neergaard and Ulhøi, 2007). Due to the social distancing measures or even general quarantine, the interviews were conducted by telephone and the digital communication tools Skype, Zoom, and Loop Up. The interviews were recorded with the respondents' consent, lasting on average 35 minutes.

Data analysis

The interviews were transcribed word for word, ignoring special linguistic and phonetic characteristics such as slang and gap fillers (“uh”, “hmm”, etc.) to focus on the interview content alone. We independently read the transcripts and coded the data in an open manner (Miles *et al.*, 2014; Corbin and Strauss, 2014) to determine how family firms were affected,

the specific measures family firms take, and which additional changes within the firms emerged due to the COVID-19 crisis. We iteratively analyzed the data until common themes emerged and could be verified through feedback loops. To ensure reliability and validity of the findings (Kirk *et al.*, 1986; Morse *et al.*, 2002; Sousa, 2014), we read and coded the data independently and compared, discussed, and revised our codes iteratively before we consolidated them. Regarding the measures firms took, we used Wenzel *et al.*'s (2020) framework to categorize them as retrenchment, persevering, or innovation measures and as short- or long-term oriented. We did not find examples of exit strategies.

Findings

Overview

Our interviews showed that not all companies are affected equally by the COVID-19 crisis, and that the different timings in the respective countries did not create significant differences. In addition, a marked difference between large and small family firms was seen. The issue of liquidity was much more important for large than for small companies. Although liquidity is in fact relevant for the latter, the topic took up significantly less time in the interviews and was less directly addressed by the interviewees.

The analysis of our interview data from the 27 interviews led to a number of key insights when respondents talked about their family firm's reaction to the COVID-19 crisis. These can be subsumed under five overarching topics which form the main focus of the following analysis and results presentation:

1. Safeguarding liquidity
2. Safeguarding operations
3. Safeguarding communication
4. Business models
5. Cultural changes

Safeguarding liquidity

Liquidity safeguarding emerged as one of the key issues during the crisis. Only two interviewees did not address the issue at all (R25, R11). While the topic was only casually

addressed in small companies, it comprised a large part of the interview time in many large companies.

The topic had very different significance in the interviews. For a number of family firms, liquidity has not been a major issue so far (R12, R16, R19, R23, R26), as they can even reinvest profits (R7) and are prepared for these kinds of situations: *“As a company in the financial sector, we are experienced in crises and assume that they will always come around. We are prepared for this and have sufficient liquidity to get through a prolonged crisis”* (R12). Others have just started to or already implemented specific measures to ensure liquidity (R1, R4, R6, R14), such as taking advantage of state aid measures and reducing fixed costs.

The governments in which our study took place have taken numerous measures to limit the crisis’s economic consequences as much as possible, including financial support for companies. In addition to direct subsidies, these measures include shortened work hours and the repayment of income tax. Out of 27 interviewed family firms, 11 are using reduced-hour working models in particular (R1, R2, R4, R5, R10, R13, R15, R17, R20, R23, R24).

The family firms we talked to also started discussions with stakeholders, including employees, landlords, and banks, to identify the potential for reducing their fixed costs. For many, personnel costs and rent are important cost units which need to be reduced to ensure liquidity. Layoffs were rarely mentioned by the family firms as a measure used during the early phases of the COVID-19 crisis. Instead, they relied on their employees and their commitment to the firm to find possibilities to reduce fixed costs. As one CEO described: *“We used an intensified interaction with employees to ask them about cost-saving potentials. This gave us a list of cost drivers that have not been used for a long time. The employees have clearly helped to reduce the costs of the company”* (R17). Other family firms are cutting back on and postponing investments (R1, R21).

Safeguarding operations

Although the mitigation of the transmission risk of COVID-19 within the company is a major goal for the interviewed family firm owners/managers, they simultaneously highlighted the need to safeguard their operations, at least to a certain degree. As *social contacts* within the firms had to be reduced as much as possible, family firms have allowed and supported working from home, and closed social meeting points. They additionally have taken advantage of free office space, and reorganized operations into two shifts.

Most family firms have implemented work from home and supported their employees in equipping their home offices, purchasing extra smartphones and laptops (R11) or computer monitors (26). Nevertheless, a few firms were not willing or able to allow for work from home (R5, R13, R14, R16, R17, R19, R23), most notably those employees that work with special infrastructure. This situation mainly affected companies in the production and hospitality sector. To reduce social contacts within offices, companies closed meeting points like cafeterias or coffee machines (R6) and encouraged their employees not to eat in groups (R18). Furthermore, firms created more distance among the individual employees by using their existing space in the best possible way (R6, R8, R18, R20): *“We have converted our meeting rooms into offices. They are not needed at the moment anyway”* (R18). While shift work is generally widespread in production departments, this form of work is in fact often new in administration, with some companies implementing shift work throughout all segments of their operation to prevent the spread of the disease (R6, R19, R21). This organizational change has created a minimum level of flexibility in the organization.

In order to be able to continue to run the company in the best possible way, some companies have set up crisis teams or restructured the management (R11, R15, R20) so that the necessary competencies for overcoming the crisis are clearly distributed: *“We have defined four necessary areas and assigned each to a responsible person”* (R15). However, this distribution of competencies wasn't only observed at the management level. In one company, a deputy was appointed for each management task in order to immediately have the best possible replacement in case of illness (R20).

The crisis is also showing effects and potential for change on the ownership level. Although the current situation calls for quick decisions, the management of a company feels significantly restricted. With many important decisions, care must currently be taken to ensure that the majority of the owners support them. On a related note, some owners find it perfectly acceptable for owner meetings to take place (R8).

Safeguarding communication

The interviews showed that safeguarding communication is important for keeping mutual interactions with employees, customers, and suppliers going despite social distancing. When it comes to employees and COVID-19, two central fears are at the heart of employees' worries. First, they fear the disease caused by the novel coronavirus and its consequences for their

family and friends. The managing director of a large family firm (R6) for instance described this fear as follows: *“The first corona case in the company led to the employees packing their things within 10 minutes and going to their home office. Some even unplugged their PCs and installed them at home.”* Second, employees fear for their jobs, as the COVID-19 crisis is likely to have economic consequences for their firms (R1, R5).

Most interview partners addressed these fears through intensive and proactive communication with their employees. The frequency and way of doing this varies among the companies. Reaching all employees meant the family firms proactively used a number of ways of communication because not all employees have access to the intranet of a company or their own e-mail address. Here they provided FAQs on their web sites (R6), while others officially communicated with their employees using regular mailings (R12), WhatsApp messaging (R8, R18), an information blog or podcast (R4), a service hotline (R20), or a daily employee newsletter written by the CEO in a very personal style (R19): *“I write a letter to my employees every day about the current situation. This goes far beyond the economic aspect. I am also addressing personal issues very strongly here.”*

This increased need for communication seemed particularly challenging within larger family firms with more complex organizational structures and employees. Here, owners have suddenly observed that existing information flows are no longer simple for several reasons. First, the implementation of work from home and shortened work hours is completely new to many of the interviewed firms (R8, R17). It is now more difficult than ever to reach their employees and diffuse critical information among all internal stakeholders.

In this situation, some firms communicate with the department heads first, who then pass on the information to their employees: *“We have online meetings with our department heads, and they inform the employees using WhatsApp”* (R8). Other companies communicate directly and on a very regular basis with employees, generating unexpected advantages (R17), with the employees suggesting possible cost reductions to the CEO, often mentioning that they have in fact addressed their respective issues before, but that they never reached the CEO.

Due to the changes emerging from firms' operations safeguarding and governments' non-pharmaceutical interventions, communication with customers only takes place via digital communication channels. Typically on-site customer contacts have now shifted to the digital world while contacts with new customers are even more difficult and sometimes no longer take

place at all. Interviewees (R2, R20, R25, R26) pointed out that initial contact and confidence building with customers will probably continue to take place on a personal level in the future. The general acceptance of digital communication has increased, even among more late-adopting customers.

The interview partners pointed out several advantages of digital meetings: better scalability for digital workshops (R25), easier to get the necessary experts into the call than directly to the customer (R15), enormous potential to save time considering the fact that not all meetings are actually necessary (R20). The CEO of a larger enterprise (R20) has to travel to Singapore on a regular basis and plans to reduce these trips now: *“I spend so much time on the plane getting there, and the jetlag also has a negative effect on my work. I really appreciate the digital meetings.”*

Business models

The respondents presented different scenarios in this category. Eight family firms (R1, R5, R9, R14, R20, R24, R25, R26) stated that they had already started to change or extend their existing business models because of the COVID-19 crisis. Although one of them has lost more than 80% of its typical revenue streams, it has taken advantage of the high demand for toilet paper, using their vacant premises to sell it (R5). A clothing company identified mask production as an opportunity and changed its production accordingly (R9). Business model adjustments also play a role for companies that continue to be successful during the crisis with their existing models. Due to the greater flexibility of customers, a family firm used the possibility to digitalize their workshops (R25). Another company started to include only digital meetings in its standard prices and charge additional costs for on-site support and workshops (R26).

One company (R8) felt significantly strengthened by the initiated change and therefore continued to adhere to it. A second group of family firms (R1, R5, R11, R13, R17, R23, R27) started to think about new business models, although for several reasons, these have not yet been implemented. The COO of one company (R1) explained this situation: *“Our daily business is greatly reduced, so we have free time that we can use for strategic discussions.”* A group of three family firms (R1, R5, R20) have already made initial changes directly and were planning long-term changes as well. It was noticeable that both companies from the hospitality sector have implemented new business models in the short-term to keep some revenue streams going, while working on further concepts in the long-term to diversify their company and reduce risks.

A total of seven companies (R2, R3, R7, R10, R16, R22, R23), mainly in Italy (six of these seven), have not changed anything to date. They are however aware that if the situation does not improve within the next one to three months they will have to change their overall strategy.

One final group of seven companies did not think about changing their business model or general strategy. They are planning to push through this crisis, as a CEO of an automotive supplier said: *“We will not adapt our business model. We have to navigate through the crisis because we have just made a lot of investments in electric mobility”* (R4).

Cultural change

A major point repeatedly touched upon in the interviews was cultural change. This takes place mainly in two sub-categories. On the one hand, the crisis is creating a strong sense of solidarity among employees and suppliers, and on the other hand, there is strong pressure to digitize. The CEO of a company with over 1700 employees described the situation with the following sentence: *“It is unbelievable and it really leaves me speechless how this strengthens the cohesion”* (R19). Another CEO emphasized above all the issue of digitalization through cultural change: *“There is a noticeable cultural change. Even older employees cannot deny the digital opportunities”* (R6).

The topic of strengthened solidarity was present in almost all the interviews in Austria, Germany, Switzerland, and Liechtenstein (R1, R4, R6, R8, R11, R12, R13, R14, R15, R19, R20, R21, R25, R26, R27). One Austrian firm for instance makes all decisions based on the employees’ interests, first and foremost striving for employee solutions (R1).

In Austria, Germany, Switzerland, and Liechtenstein, family firms’ CEOs were fascinated by the employees’ solidarity and commitment to the company. Employees’ commitment is manifesting itself through increased motivation, teamwork, cohesion, and team spirit (R4, R6, R12, R14, R19, R20, R21, R26, R27) guided by the vision of facing this crisis together (R8, R12, R15, R21). Also, employees are showing an understanding for the exceptional measures taken by the family firms to safeguard liquidity and operations, including shortened work hours (R21) as a means to safeguard the firms’ survival. One CEO of a company that is affected by seasonal changes and is fully booked at the moment stated: *“We are currently in a special situation. We have a lot of work to do. The staff approached me to suggest that we work through the Easter holidays”* (R19). In another company, employees are trying to create new ideas and identify potential for the company to survive and get stronger: *“Our employees all think individually about how they can help the company to keep the jobs”* (R20).

In many companies, the effects of the crisis are leading to a strong push for digitalization. The cultural perspective in particular is being emphasized by the companies. One interviewee described the situation as follows: *“We have had the technical possibilities for a long time. But they haven’t been used a lot. Now the employees are using the tools”* (R6). Another interviewee that manages 50 employees in restaurants and bars supported this statement: *“The crisis encourages even the cook, who still does orders by hand, to use digital tools”* (R1). The CEO of a medium-sized company that produces lights for malls described the quick change in the organization to digital tools: *“For us, the crisis is a kind of forced digitalization”* (R21). In total, 15 of all 26 interview partners mentioned the topic of digitalization.

Discussion and conclusion

Our paper represents the first empirical study in the management field providing initial evidence of the economic impact of the ongoing COVID-19 pandemic on family firms in five Western European countries. Based on a sample of 27 family firms, our findings contribute to three main research streams:

First, they contribute to the fields of strategic management and crisis management by integrating our findings into the proposed crisis responses of Wenzel et al. (2020). Our findings not only support but also advance the authors’ proposed categorization of strategic responses in crisis situations, showing that these strategies are rarely applied on their own, but instead are combined by using a set of different interventions. Second, contributing to family firm research, we point out family firms’ sense of securing liquidity and solidarity. Third, in the context of innovation and digitalization, we highlight the current crisis’ impact on strategic changes in business models and the operational use of digital tools as well as the (positively) forced culture of digitalization. This last point also provides another insight, i.e. the distinction between planned changes initiated by the company and unintended changes as a result of the crisis.

Contribution 1: Strategic Management and Crisis Management

Our analysis shows that family firms follow different approaches to deal with a crisis. These different strategies can be traced back to the varying starting situations of the companies. The decisive factor seems to be above all the firms’ sector, which dictates the degree to which the firms are affected by the health crisis. Firm size also appears to play a significant role. Some firms are hardly affected at all, and yet still follow a strategy of crisis management that goes

far beyond persevering. Here we see that the entrepreneurial orientation of the management team helps to see the situation as a business opportunity.

Our empirical findings can confirm and extend the crisis response strategies of Wenzel et al. (2020). We particularly respond to their call for more work on crisis management strategies in the COVID-19 crisis, as we substantiate these with the actual portfolio of coping mechanisms utilized in the early stages of the COVID-19 crisis. Our research identified various mechanisms that can be related to three of the four crisis management strategies. We did not find an *exit* case in our interviews, which may be due to the early phase of the crisis.

In contrast to the more separate strategies described by Wenzel et al. (2020), our findings highlight how most companies utilized a combination of different coping mechanisms directly after the crisis started (Table 4). In the empirical context, each of the three strategies was illustrated by several operational measures which are mostly combined. Persevering is the only strategy used as a single strategic response to the crisis. Eight companies are following this strategy, and are mainly waiting for the situation to change. What these companies have in common is that they already had sufficient liquidity before the crisis, and therefore did not require cost-saving measures. In addition, some of the companies will need to make strategic changes in the future if the crisis lasts longer. This behavior fits the statement by Wenzel et al. (2020), noting that persevering is a good strategy, although if the crisis lasts too long, it cannot be pursued further.

Strategic Response	Number of Companies
Pure Retrenchment	None
Pure Persevering	8
Pure Innovation	None
Retrenchment + Persevering	6
Retrenchment + Innovation	1
Persevering + Innovation	6
Retrenchment + Persevering + Innovation	6

Table 4: Combination of measures of strategic responses

The adjustments made in the companies have both short-term and long-term consequences and were usually made for two reasons. The first reason is safeguarding liquidity in the crisis. The second reason is to improve the long-term survival and viability of the company. Because not one single generic strategy might be suited to address both objectives simultaneously, the mixed strategies of family firms in our study may describe an “ambidextrous crisis management” (Schmitt *et al.*, 2010). On the one hand, these companies have kept operational daily business alive and secured the jobs and liquidity of the business by handling the existing

operations accordingly. On the other hand, they simultaneously have started to explore opportunities for long-term strategic changes that may secure the survival and viability of the firm.

Based on the integration of the interview findings into the paper of Wenzel et al. (2020), we propose a model (Figure 1) of strategic responses that family firms may utilize during a crisis situation from a short-term to a long-term perspective. This combination results in a matrix which, on the one hand, takes up the response strategies from the existing literature and, on the other hand, considers temporal perspectives. The model is based on six fields within which firms can react.

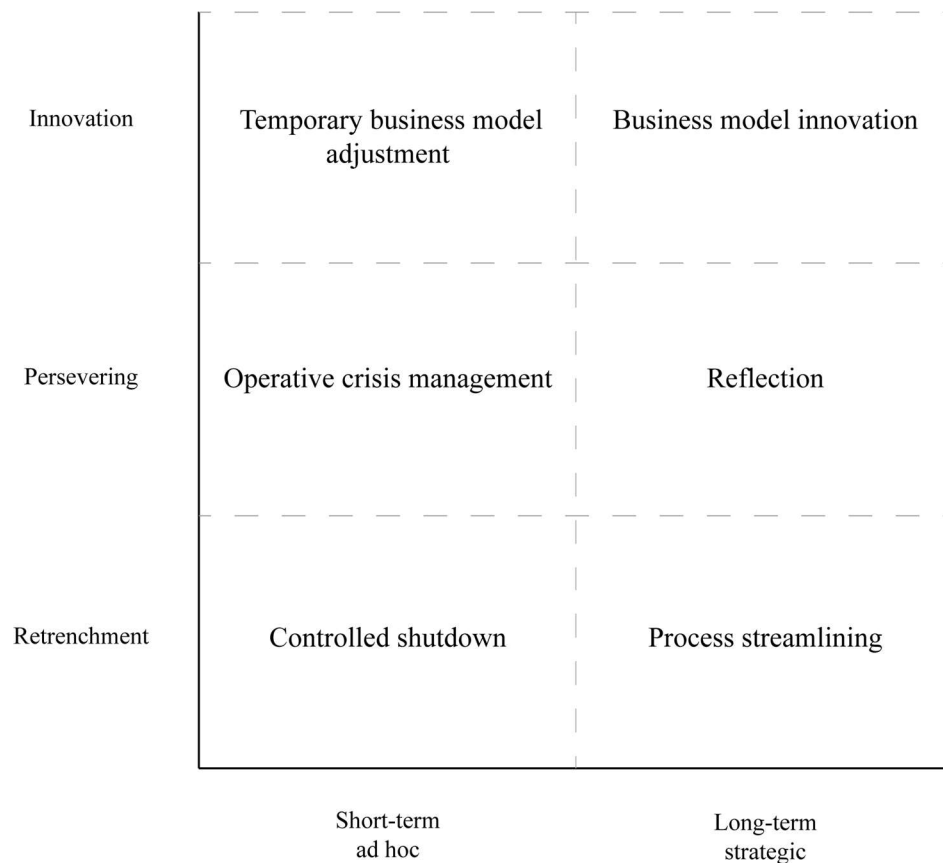


Figure 1: Model of short-term and long-term interventions.

One major intervention during a crisis is the *controlled shutdown*. Here a family firm reduces fixed costs and safeguards liquidity. Practical examples are the implementation of

shortened work hours. Although family firms cannot stay in the locus of a shutdown long-term, they can however engage in *process streamlining*, reducing unnecessary complexity within the organization and identifying inefficiencies (Benner and Zenger, 2016).

Every crisis brings specific managerial challenges (see Bundy *et al.*, 2017) that are combined in *operative crisis management*. These challenges have to be addressed to allow the family firm to maintain the status quo. In general this involves the creation of a separate team to handle the crisis, and in the specific pandemic situation involves social distancing. Once the low point of a crisis has been overcome, it is important for companies to start a *reflection*, training their employees to adapt processes based on what they learned during the crisis; this process additionally includes organizational learning (Wang, 2008).

In the short run, family firms engage in *temporary business model adjustment* because they only can react within their existing business model and strategy (Casadesus-Masanell and Ricart, 2010). Despite this limitation, they can in fact identify opportunities based on the changed environment the crisis creates, altering or adapting their business model for a period of time to exploit these opportunities. Examples here include producing masks or changing from a classic dine-in restaurant to food delivery. In the long run family firms engage in *business model innovation* to overcome a crisis and create a more sustainable foundation for the future, making a change to the strategy necessary. While the temporary business model adjustment is basically only new to the firm and not to the industry, the business model innovation in the long run can be more complex (see Foss and Saebi, 2017).

This study provides first insights into the six crisis interventions and their bundles of measures. These packages of measures should however be further reconsidered. Due to the timing of the study, they may still change significantly if/as the crisis goes on. Companies furthermore have a different view of the situation after a crisis. Another possibility is to research combinations of strategies. In this case, only persevering was pursued as a single strategy. Research will have to show whether this is an exception to this situation. A focus here should be on research into the medium- to long-term change and adaptation of the strategies. The question arises whether companies that provide information on their strategies during the crisis will continue to pursue the same strategies after it is over.

Contribution 2: Family Firm Research

Focusing on family firms and how they are affected by the ongoing COVID-19 crisis, we identify several special features of family firms' crisis reaction. First, we find that family firms'

typical long-term orientation (Miller and Le Breton-Miller, 2005) manifests itself in a strong focus on liquidity safeguarding. Although liquidity safeguarding represents an important issue while facing the COVID-19 crisis for all family firms, not all currently suffer from severe liquidity problems. This is in line with prior literature proposing that, even during crisis situations, family firms benefit from their controlling families' financial support to secure investments and employment in the case of reduced market demand and competitiveness (Villalonga and Amit, 2010). The firms suffering from liquidity problems during the early phases of the current COVID-19 crisis preferred to use state support and reduced their fixed expenses, including personnel costs, rent, and investments. This reaction may be explained as the COVID-19 crisis in contrast to e.g. the financial crisis of 2008 is impacting both the demand and supply sides simultaneously (del Rio-Chanona *et al.*, 2020), limiting the opportunities for family firms to safeguard liquidity on their own.

Existing literature and prominent media examples (e.g., FCA) show that family firms may react faster in crisis situations than their non-family counterparts (de Vries, 1993; Ward, 1997). Our investigation however finds that this does not necessarily have to be the case in all family firms, and that family ownership is not always a pure advantage. Family firms in particular with a large number of shareholders and external directors may end up in greater trouble than non-family firms in crisis situations as family owners' interests may diverge from those of non-family managers (Mustakallio *et al.*, 2002). Family settings often do not provide the opportunity for digital meetings everywhere, even though during times when social distancing is a legal requirement, larger meetings cannot be held in any other setting. From this arises the question about (1) whether the rapid decision-making abilities of families apply to companies in all constellations, (2) which portion of shareholders' decisions are significantly slowed down or otherwise impacted, and (3) what consequences external managers have.

Our findings also reveal family firms' extraordinary solidarity with employees as well as external stakeholders facing this crisis. The investigation clearly shows that family firms count on their employees to overcome the crisis period together and support them in facing the COVID-19 crisis. Family firms seek to make sure that employees can work efficiently at home, i.e. by means of equipment purchases, while also emphasizing the importance of personal and frequent communication and interaction with employees. This strong sense of belonging and commitment can help companies to overcome employee conflicts and avoid turnover in the long run (Gomez-Mejia *et al.*, 2011).

Contribution 3: Innovation and Digitalization

Our findings support previous research (e.g. Archibugi et al., (2013), Seeger et al., (2005)), showing that external shocks may trigger adaptation and innovation by organizations.

The findings of our study point to two mechanisms that foster the adoption of digital tools (Venkatesh *et al.*, 2003). First, the situation and restrictions make personal interaction impossible and force even late-adopting employees and managers of family firms to adapt to new digital workflows and technologies (e.g. virtual meeting technologies). Second, this forced adaptation allows the opportunity to prove a technology's functionalities and advantages and may therefore convince previously resistant employees of the benefits of digital technologies in daily business. As this individual conviction spreads into a company, cultural changes that were often described as necessary but difficult to achieve for digital transformation in incumbent firms get rolling (e.g., Warner and Wäger, 2019). The pure use of digital technologies changes the way employees think, and allows family firms to identify new and unexpected strategic opportunities (Nambisan *et al.*, 2017; Tilson *et al.*, 2010).

Previous studies have shown that changes in the environment are a determinant of business model innovation (e.g. Clauss et al, 2019). We provide two explanations for this previously identified effect. First, in situations where the short- and long-term survival of the firm is at stake, companies need to find creative ways to utilize their core competences, even stretching the boundaries of their established business model (e.g. producing face masks instead of clothing). Second, freed-up resources and the organizational breathing space created as a result might suddenly give companies the opportunity to reassess their established business model and engage in strategic business planning.

Moreover, our findings highlight a higher acceptance of digital communication on the customer side. Companies are expecting a drastic reduction in travel (even though some expect this to not last long). Therefore, the time should be used to show customers on short notice the benefits of digital communication such as virtual meetings and the involvement of several experts simultaneously when attending them. Research even shows that one of the outcomes of a crisis is a changed relationship with stakeholders (Coombs, 2007; Pfarrer *et al.*, 2008).

We suggest an investigation of whether the initial discussion of a business model innovation during a crisis will lead to its actual implementation in the long run. Further research projects should examine the developmental status of the intended innovation over time and show whether the firms that claim to innovate their business model actually implement this.

Managerial Implications

The findings of this study provide important and timely implications for family firm owners and managers. Family firms can follow the model developed to respond quickly and efficiently to a crisis. The aim is not only to survive the crisis, but also to emerge from it stronger.

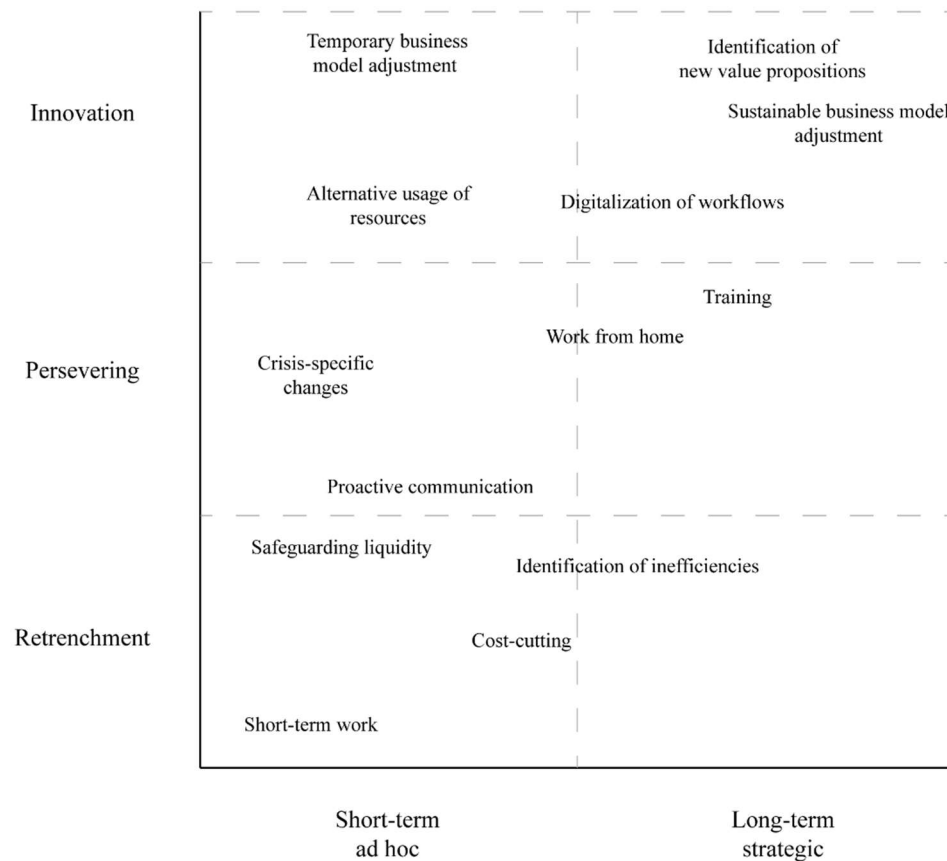


Figure 2: Specific measures to address during the crisis.

In a first step, companies must ensure liquidity, reducing their costs and using shorter working hours or other government support. These short-term effects should be extended by identifying inefficiencies in the company, which can also help achieve long-term effects. The companies we studied above all are applying the ideas of employees in this situation to quickly achieve a cost reduction.

Family firms that have the opportunity to continue operating in the wake of the crisis should take advantage of this opportunity and create the appropriate framework conditions. This includes situation-specific adjustments which, in the case of COVID-19, above all enable social distance and ensure improved hygiene. In addition, communication with employees plays an essential role. Employees want to have their fears calmed, and need to be kept informed about the ongoing situation. From a long-term perspective, continuing education is a key factor. If financial means are available, free time for employees can be used to hold further training without hindering the employee in his or her operational tasks.

In addition to these safeguards for ongoing operations, family firms also take advantage of short-term opportunities and adapt business models. For many companies, crises provide these opportunities for adjustment. Innovations can also be external (Chesbrough, 2020). These include the numerous companies that now produce medical protective clothing or restaurants that are creating new ideas to continue generating sales. Short-term opportunities may also give rise to long-term ones. Therefore, companies should be thinking now about the long-term effects of the crisis and the potential business models that will emerge in the future. One main focus of these long-term considerations is to improve the company's resistance to crises.

Limitations and Future Research

27 family firms in a total of five countries were qualitatively examined in the context of this study. The study design was carefully selected to objectively evaluate the findings. Despite its important early contribution to business research and management in the realm of the COVID-19 crisis, our exploratory study only provides preliminary findings. It will hopefully trigger future studies that investigate their underlying mechanisms and procedures as well as the consequences of the coping mechanisms identified here. We look forward to a multitude of subsequent further research on the specifics of this crisis.

We encourage future research that investigates how family managers as well as the business families related to the firm perceive and assess the current as well as any crisis situation, and how decision-making about coping mechanisms is utilized in various family situations. We particularly consider this an important research area, with one interviewee mentioning that if there are serious conflicts in the family, handling a crisis becomes a nightmare.

Due to the fact that this study took place immediately after the onset of the crisis, and that it cannot be said at this time which companies will emerge stronger from it, it is not possible

make conclusion about the success of the coping mechanisms and crisis management strategies described. The special situation and time in which this study was created leaves open a comparative assessment of the usefulness of these mechanisms. Large-scale empirical assessments may be suited to continuing this research effort. Due to the forecasted enormous long-term impact of the COVID-19 crisis, our study should be followed up with longitudinal analyses to investigate the long-term strategic responses of family firms to it.

We finally would like to encourage researchers to do further studies in other countries as well to achieve a global picture of the outcomes.

References

- Amann, B. and Jaussaud, J. (2012), "Family and non-family business resilience in an economic downturn", *Asia Pacific business review*, Vol. 18 No. 2, pp.203-223.
- Anderson, R.M., Heesterbeek, H., Klinkenberg, D. and Hollingsworth, T.D. (2020), "How will country-based mitigation measures influence the course of the COVID-19 epidemic?", *The Lancet*, Vol. 395 No. 10228, pp.931-934.
- Archibugi, D., Filippetti, A. and Frenz, M. (2013), "Economic crisis and innovation: is destruction prevailing over accumulation?", *Research Policy*, Vol. 42 No. 2, pp.303-314.
- Aronoff, C.E. and Ward, J.L. (1995), "Family-owned businesses: a thing of the past or a model for the future?", *Family Business Review*, Vol. 8 No. 2, pp.121-130.
- Arrondo-García, R., Fernández-Méndez, C. and Menéndez-Requejo, S. (2016), "The growth and performance of family businesses during the global financial crisis: The role of the generation in control", *Journal of Family Business Strategy*, Vol. 7 No. 4, pp.227-237.
- Baekkeskov, E. and Rubin, O. (2014), "Why pandemic response is unique: powerful experts and hands-off political leaders", *Disaster Prevention and Management*, Vol. No.
- Baker, S., Bloom, N., Davis, S.J., Kost, K., Sammon, M. and Viratyosin, T. (2020), "The unprecedented stock market reaction to COVID-19", *Covid Economics: Vetted and Real-Time Papers*, Vol. 1 No. 3.
- Baldwin, R. and Weder di Mauro, B. (2020), "Introduction", in Baldwin, R. and Weder di Mauro, B. Eds.), *Economics in the Time of COVID-19*. CEPR, London.
- Bansal, P. and Corley, K. (2012) Publishing in AMJ—Part 7: What's different about qualitative research?: American Society of Nephrology Briarcliff Manor, NY.
- Barker, V.L. and Duhaime, I.M. (1997), "Strategic change in the turnaround process: Theory and empirical evidence", *Strategic management journal*, Vol. 18 No. 1, pp.13-38.
- Baron, S., Harris, K. and Elliott, D. (2005), "Crisis management and services marketing", *Journal of Services Marketing*, Vol. No.
- Bauweraerts, J. (2013), "How do private family firms face the crisis? Empirical evidence from Belgium", *International Business Research*, Vol. 6 No. 8, pp.91.
- Benner, M.J. and Zenger, T. (2016), "The lemons problem in markets for strategy", *Strategy Science*, Vol. 1 No. 2, pp.71-89.
- Berrone, P., Cruz, C. and Gomez-Mejia, L.R. (2012), "Socioemotional wealth in family firms: Theoretical dimensions, assessment approaches, and agenda for future research", *Family Business Review*, Vol. 25 No. 3, pp.258-279.
- Betts, P. (2001), "Family companies are ready for the worst", *Financial Times*, Vol. 30 No. 2001, pp.18-19.
- Bluhm, D.J., Harman, W., Lee, T.W. and Mitchell, T.R. (2011), "Qualitative research in management: A decade of progress", *Journal of Management Studies*, Vol. 48 No. 8, pp.1866-1891.
- Boddy, C.R. (2016), "Sample size for qualitative research", *Qualitative Market Research: An International Journal*, Vol. No.
- Bootsma, M.C. and Ferguson, N.M. (2007), "The effect of public health measures on the 1918 influenza pandemic in US cities", *Proceedings of the National Academy of Sciences*, Vol. 104 No. 18, pp.7588-7593.
- Brand, M., Tiberius, V., Bican, P.M. and Brem, A. (2019), "Agility as an innovation driver: towards an agile front end of innovation framework", *Review of Managerial Science*, Vol. No., pp.1-31.
- Brockner, J. and James, E.H. (2008), "Toward an understanding of when executives see crisis as opportunity", *The Journal of Applied Behavioral Science*, Vol. 44 No. 1, pp.94-115.

- Bundy, J., Pfarrer, M.D., Short, C.E. and Coombs, W.T. (2017), "Crises and crisis management: Integration, interpretation, and research development", *Journal of Management*, Vol. 43 No. 6, pp.1661-1692.
- Cahyanto, I., Wiblishauser, M., Pennington-Gray, L. and Schroeder, A. (2016), "The dynamics of travel avoidance: The case of Ebola in the US", *Tourism Management Perspectives*, Vol. 20 No., pp.195-203.
- Carnahan, S. (2017), "Blocked But Not Tackled: Who Founds New Firms When Rivals Dissolve?", *Strategic Management Journal*, Vol. 38 No. 11, pp.2189-2212.
- Carney, M. (2005), "Corporate governance and competitive advantage in family-controlled firms", *Entrepreneurship Theory and Practice*, Vol. 29 No. 3, pp.249-265.
- Casadesus-Masanell, R. and Ricart, J.E. (2010), "From strategy to business models and onto tactics", *Long range planning*, Vol. 43 No. 2-3, pp.195-215.
- Cater, J. and Schwab, A. (2008), "Turnaround strategies in established small family firms", *Family Business Review*, Vol. 21 No. 1, pp.31-50.
- Chan, J.F.-W., Yuan, S., Kok, K.-H., To, K.K.-W., Chu, H., Yang, J., Xing, F., Liu, J., Yip, C.C.-Y. and Poon, R.W.-S. (2020), "A familial cluster of pneumonia associated with the 2019 novel coronavirus indicating person-to-person transmission: a study of a family cluster", *The Lancet*, Vol. 395 No. 10223, pp.514-523.
- Chesbrough, H. (2020), "To recover faster from Covid-19, open up: Managerial implications from an open innovation perspective", *Industrial Marketing Management*, Vol. No.
- Chrisman, J.J., Chua, J.H. and Sharma, P. (2005), "Trends and directions in the development of a strategic management theory of the family firm", *Entrepreneurship theory and practice*, Vol. 29 No. 5, pp.555-575.
- Clauss, T. (2017), "Measuring business model innovation: conceptualization, scale development, and proof of performance", *R&D Management*, Vol. 47 No. 3, pp.385-403.
- Clauss, T., Abebe, M., Tangpong, C. and Hock, M. (2019), "Strategic agility, business model innovation, and firm performance: an empirical investigation", *IEEE Transactions on Engineering Management*, Vol. No.
- Cohen, M.L. (2000), "Changing patterns of infectious disease", *Nature*, Vol. 406 No. 6797, pp.762-767.
- Coombs, W.T. (2007), "Protecting organization reputations during a crisis: The development and application of situational crisis communication theory", *Corporate reputation review*, Vol. 10 No. 3, pp.163-176.
- Corbin, J. and Strauss, A. (2014) *Basics of qualitative research: Techniques and procedures for developing grounded theory*, Sage publications.
- D'Aveni, R.A. and MacMillan, I.C. (1990), "Crisis and the content of managerial communications: A study of the focus of attention of top managers in surviving and failing firms", *Administrative science quarterly*, Vol. No., pp.634-657.
- Dane, E. and Pratt, M.G. (2007), "Exploring intuition and its role in managerial decision making", *Academy of management review*, Vol. 32 No. 1, pp.33-54.
- De Massis, A., Kotlar, J., Campopiano, G. and Cassia, L. (2013), "Dispersion of family ownership and the performance of small-to-medium size private family firms", *Journal of Family Business Strategy*, Vol. 4 No. 3, pp.166-175.
- de Vries, M.F.K. (1993), "The dynamics of family controlled firms: The good and the bad news", *Organizational dynamics*, Vol. 21 No. 3, pp.59-71.
- del Rio-Chanona, R.M., Mealy, P., Pichler, A., Lafond, F. and Farmer, D. (2020), "Supply and demand shocks in the COVID-19 pandemic: An industry and occupation perspective", *arXiv preprint arXiv:2004.06759*, Vol. No.

- Denis, J.-L., Lamothe, L. and Langley, A. (2001), "The dynamics of collective leadership and strategic change in pluralistic organizations", *Academy of Management journal*, Vol. 44 No. 4, pp.809-837.
- Denzin, N.K. and Lincoln, Y.S. (2008), "Introduction: The discipline and practice of qualitative research", Vol. No.
- Dobrzynski, J. (1993), "Relationship investing", *Business Week*, Vol. 3309 No. 15, pp.68-75.
- Doz, Y. (2011), "Qualitative research for international business", *Journal of International Business Studies*, Vol. 42 No. 5, pp.582-590.
- Dyer Jr, W.G. and Whetten, D.A. (2006), "Family firms and social responsibility: Preliminary evidence from the S&P 500", *Entrepreneurship Theory and Practice*, Vol. 30 No. 6, pp.785-802.
- Eisenhardt, K.M. (1989), "Building theories from case study research", *Academy of management review*, Vol. 14 No. 4, pp.532-550.
- Eisenhardt, K.M. and Graebner, M.E. (2007), "Theory building from cases: Opportunities and challenges", *Academy of management journal*, Vol. 50 No. 1, pp.25-32.
- Elliott, D. and McGuinness, M. (2002), "Public inquiry: panacea or placebo?", *Journal of Contingencies and Crisis Management*, Vol. 10 No. 1, pp.14-25.
- Elsbach, K.D. (1994), "Managing organizational legitimacy in the California cattle industry: The construction and effectiveness of verbal accounts", *Administrative science quarterly*, Vol. No., pp.57-88.
- Faghfour, P., Kraiczy, N.D., Hack, A. and Kellermanns, F.W. (2015), "Ready for a crisis? How supervisory boards affect the formalized crisis procedures of small and medium-sized family firms in Germany", *Review of Managerial Science*, Vol. 9 No. 2, pp.317-338.
- Faulkner, B. (2001), "Towards a framework for tourism disaster management", *Tourism management*, Vol. 22 No. 2, pp.135-147.
- Fenichel, E.P. (2013), "Economic considerations for social distancing and behavioral based policies during an epidemic", *Journal of health economics*, Vol. 32 No. 2, pp.440-451.
- Ferguson, N.M., Laydon, D., Nedjati-Gilani, G., Imai, N., Ainslie, K., Baguelin, M., Bhatia, S., Boonyasiri, A., Cucunubá, Z. and Cuomo-Dannenburg, G. (2020), "Impact of non-pharmaceutical interventions (NPIs) to reduce COVID-19 mortality and healthcare demand", *Imperial College, London*. DOI: <https://doi.org/10.25561/77482>, Vol. No.
- Ferlie, E., Fitzgerald, L., Wood, M. and Hawkins, C. (2005), "The nonspread of innovations: the mediating role of professionals", *Academy of management journal*, Vol. 48 No. 1, pp.117-134.
- Filser, M., Brem, A., Gast, J., Kraus, S. and Calabrò, A. (2016), "Innovation in Family Firms—Examining The Inventory And Mapping The Path", *International Journal of Innovation Management*, Vol. 20 No. 06, pp.1650054.
- Foss, N.J. and Saebi, T. (2017), "Fifteen years of research on business model innovation: how far have we come, and where should we go?", *Journal of Management*, Vol. 43 No. 1, pp.200-227.
- Gaskell, G. (2000), "Individual and group interviewing", *Qualitative researching with text, image and sound*, Vol. No., pp.38-56.
- Gioia, D.A., Corley, K.G. and Hamilton, A.L. (2013), "Seeking qualitative rigor in inductive research: Notes on the Gioia methodology", *Organizational research methods*, Vol. 16 No. 1, pp.15-31.
- Gomez-Mejia, L.R., Cruz, C., Berrone, P. and De Castro, J. (2011), "The bind that ties: Socioemotional wealth preservation in family firms", *Academy of Management Annals*, Vol. 5 No. 1, pp.653-707.

- Gómez-Mejía, L.R., Haynes, K.T., Núñez-Nickel, M., Jacobson, K.J. and Moyano-Fuentes, J. (2007), "Socioemotional wealth and business risks in family-controlled firms: Evidence from Spanish olive oil mills", *Administrative science quarterly*, Vol. 52 No. 1, pp.106-137.
- Graebner, M.E., Martin, J.A. and Roundy, P.T. (2012), "Qualitative data: Cooking without a recipe", *Strategic Organization*, Vol. 10 No. 3, pp.276-284.
- Greiner, L.E. (1989), "Evolution and revolution as organizations grow", *Readings in strategic management*. Springer.
- Guest, G., Bunce, A. and Johnson, L. (2006), "How many interviews are enough? An experiment with data saturation and variability", *Field methods*, Vol. 18 No. 1, pp.59-82.
- Hale, J.E., Dulek, R.E. and Hale, D.P. (2005), "Crisis response communication challenges: Building theory from qualitative data", *The Journal of Business Communication* (1973), Vol. 42 No. 2, pp.112-134.
- Harvey, S. and Haines Iii, V.Y. (2005), "Employer treatment of employees during a community crisis: The role of procedural and distributive justice", *Journal of Business and Psychology*, Vol. 20 No. 1, pp.53-68.
- Heath, R. (1995), "The Kobe earthquake: Some realities of strategic management of crises and disasters", *Disaster Prevention and Management: An International Journal*, Vol. No.
- Herbane, B. (2013), "Exploring crisis management in UK small-and medium-sized enterprises", *Journal of Contingencies and Crisis Management*, Vol. 21 No. 2, pp.82-95.
- Hills, A. (1998), "Seduced by recovery: The consequences of misunderstanding disaster", *Journal of Contingencies and Crisis Management*, Vol. 6 No. 3, pp.162-170.
- Huang, C., Wang, Y., Li, X., Ren, L., Zhao, J., Hu, Y., Zhang, L., Fan, G., Xu, J. and Gu, X. (2020), "Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China", *The Lancet*, Vol. 395 No. 10223, pp.497-506.
- Jacobides, M.G. (2005), "Industry change through vertical disintegration: How and why markets emerged in mortgage banking", *Academy of Management Journal*, Vol. 48 No. 3, pp.465-498.
- James, E.H. and Wooten, L.P. (2005), "Leadership as (Un) usual:: How to Display Competence in Times of Crisis", *Organizational Dynamics*, Vol. 34 No. 2, pp.141-152.
- Kim, Y. and Vonortas, N.S. (2014), "Cooperation in the formative years: Evidence from small enterprises in Europe", *European Management Journal*, Vol. 32 No. 5, pp.795-805.
- Kirk, J., Miller, M.L. and Miller, M.L. (1986) *Reliability and validity in qualitative research*, Sage.
- Kraus, S., Moog, P., Schlepphorst, S. and Raich, M. (2013), "Crisis and turnaround management in SMEs: a qualitative-empirical investigation of 30 companies", *International Journal of Entrepreneurial Venturing*, Vol. 5 No. 4, pp.406-430.
- Kvale, S. (1983), "The qualitative research interview: A phenomenological and a hermeneutical mode of understanding", *Journal of phenomenological psychology*, Vol. 14 No. 2, pp.171.
- Lampel, J., Shamsie, J. and Shapira, Z. (2009), "Experiencing the improbable: Rare events and organizational learning", *Organization science*, Vol. 20 No. 5, pp.835-845.
- Last, J.M., Harris, S.S., Thuriaux, M.C. and Spasoff, R.A. (2001) *A dictionary of epidemiology*, International Epidemiological Association, Inc.
- Lau, K., Hauck, K. and Miraldo, M. (2019), "Excess influenza hospital admissions and costs due to the 2009 H1N1 pandemic in England", *Health economics*, Vol. 28 No. 2, pp.175-188.
- Lechner, C., Dowling, M. and Welpe, I. (2006), "Firm networks and firm development: the role of the relational mix", *Journal of Business Venturing*, Vol. 21 No. 4, pp.514-540.

- Lee, C.-K., Song, H.-J., Bendle, L.J., Kim, M.-J. and Han, H. (2012), "The impact of non-pharmaceutical interventions for 2009 H1N1 influenza on travel intentions: A model of goal-directed behavior", *Tourism Management*, Vol. 33 No. 1, pp.89-99.
- Lee, J. (2006), "Family firm performance: Further evidence", *Family business review*, Vol. 19 No. 2, pp.103-114.
- Lee, T.W., Mitchell, T.R. and Sablinski, C.J. (1999), "Qualitative research in organizational and vocational psychology, 1979–1999", *Journal of vocational behavior*, Vol. 55 No. 2, pp.161-187.
- Lins, K.V., Volpin, P. and Wagner, H.F. (2013), "Does family control matter? International evidence from the 2008–2009 financial crisis", *The Review of Financial Studies*, Vol. 26 No. 10, pp.2583-2619.
- Maitlis, S. (2005), "The social processes of organizational sensemaking", *Academy of management journal*, Vol. 48 No. 1, pp.21-49.
- McKercher, B. and Chon, K. (2004), "The over-reaction to SARS and the collapse of Asian tourism", *Annals of tourism research*, Vol. 31 No. 3, pp.716-719.
- McKibbin, W.J. and Fernando, R. (2020), "The global macroeconomic impacts of COVID-19: Seven scenarios", Vol. No.
- Miles, M.B., Huberman, A.M. and Saldaña, J. (2014), "Qualitative data analysis: A methods sourcebook. 3rd", ed: *Thousand Oaks, CA: Sage*, Vol. No.
- Miller, D. and Le Breton-Miller, I. (2005) *Managing for the long run: Lessons in competitive advantage from great family businesses*, Harvard Business Press.
- Minichilli, A., Brogi, M. and Calabrò, A. (2016), "Weathering the storm: Family ownership, governance, and performance through the financial and economic crisis", *Corporate Governance: An International Review*, Vol. 24 No. 6, pp.552-568.
- Morse, J.M., Barrett, M., Mayan, M., Olson, K. and Spiers, J. (2002), "Verification strategies for establishing reliability and validity in qualitative research", *International journal of qualitative methods*, Vol. 1 No. 2, pp.13-22.
- Muellbauer, J. (2020), "The coronavirus pandemic and US consumption", *VOX CERP Policy Portal*, Vol. No.
- Mustakallio, M., Autio, E. and Zahra, S.A. (2002), "Relational and contractual governance in family firms: Effects on strategic decision making", *Family business review*, Vol. 15 No. 3, pp.205-222.
- Nambisan, S., Lyytinen, K., Majchrzak, A. and Song, M. (2017), "Digital Innovation Management: Reinventing innovation management research in a digital world", *Mis Quarterly*, Vol. 41 No. 1.
- Ndofor, H.A., Vanevenhoven, J. and Barker III, V.L. (2013), "Software firm turnarounds in the 1990s: An analysis of reversing decline in a growing, dynamic industry", *Strategic Management Journal*, Vol. 34 No. 9, pp.1123-1133.
- Neergaard, H. and Ulhøi, J.P. (2007) *Handbook of qualitative research methods in entrepreneurship*, Edward Elgar Publishing.
- Nigmatulina, K.R. and Larson, R.C. (2009), "Living with influenza: Impacts of government imposed and voluntarily selected interventions", *European Journal of Operational Research*, Vol. 195 No. 2, pp.613-627.
- Outhwaite, W. (1975), "Understanding social life the method called Verstehen", Vol. No.
- Pajunen, K. (2006), "Stakeholder influences in organizational survival", *Journal of management studies*, Vol. 43 No. 6, pp.1261-1288.
- Park, Y., Hong, P. and Roh, J.J. (2013), "Supply chain lessons from the catastrophic natural disaster in Japan", *Business Horizons*, Vol. 56 No. 1, pp.75-85.

- Pasquini-Descomps, H., Brender, N. and Maradan, D. (2017), "Value for money in H1N1 influenza: A Systematic review of the cost-effectiveness of pandemic interventions", *Value in Health*, Vol. 20 No. 6, pp.819-827.
- Pearce, J.A. and Robbins, D.K. (1994), "Retrenchment remains the foundation of business turnaround", *Strategic Management Journal*, Vol. 15 No. 5, pp.407-417.
- Pearce, J.A. and Robbins, K. (1993), "Toward improved theory and research on business turnaround", *Journal of management*, Vol. 19 No. 3, pp.613-636.
- Pearson, C.M. and Clair, J.A. (1998), "Reframing crisis management", *Academy of management review*, Vol. 23 No. 1, pp.59-76.
- Pfarrer, M.D., Decelles, K.A., Smith, K.G. and Taylor, M.S. (2008), "After the fall: Reintegrating the corrupt organization", *Academy of Management Review*, Vol. 33 No. 3, pp.730-749.
- Ren, C.R., Hu, Y. and Cui, T.H. (2019), "Responses to rival exit: Product variety, market expansion, and preexisting market structure", *Strategic Management Journal*, Vol. 40 No. 2, pp.253-276.
- Ritchie, B.W. (2004), "Chaos, crises and disasters: a strategic approach to crisis management in the tourism industry", *Tourism management*, Vol. 25 No. 6, pp.669-683.
- Roy, R., Lampert, C.M. and Stoyneva, I. (2018), "When dinosaurs fly: The role of firm capabilities in the 'avianization' of incumbents during disruptive technological change", *Strategic Entrepreneurship Journal*, Vol. 12 No. 2, pp.261-284.
- Runyan, R.C. (2006), "Small business in the face of crisis: identifying barriers to recovery from a natural disaster 1", *Journal of Contingencies and crisis management*, Vol. 14 No. 1, pp.12-26.
- Sadique, M.Z., Edmunds, W.J., Smith, R.D., Meerding, W.J., De Zwart, O., Brug, J. and Beutels, P. (2007), "Precautionary behavior in response to perceived threat of pandemic influenza", *Emerging infectious diseases*, Vol. 13 No. 9, pp.1307.
- Schmitt, A., Probst, G. and Tushman, M.L. (2010), "Management in times of economic crisis: Insights into organizational ambidexterity", *Management*, Vol. 13 No. 3, pp.128-150.
- Seawright, J. and Gerring, J. (2008), "Case selection techniques in case study research: A menu of qualitative and quantitative options", *Political research quarterly*, Vol. 61 No. 2, pp.294-308.
- Seeger, M.W., Ulmer, R.R., Novak, J.M. and Sellnow, T. (2005), "Post-crisis discourse and organizational change, failure and renewal", *Journal of Organizational Change Management*, Vol. No.
- Simchi-Levi, D., Schmidt, W. and Wei, Y. (2014), "From superstorms to factory fires: Managing unpredictable supply chain disruptions", *Harvard Business Review*, Vol. 92 No. 1-2, pp.96-101.
- Sirmon, D.G. and Hitt, M.A. (2003), "Managing resources: Linking unique resources, management, and wealth creation in family firms", *Entrepreneurship theory and practice*, Vol. 27 No. 4, pp.339-358.
- Sousa, D. (2014), "Validation in qualitative research: General aspects and specificities of the descriptive phenomenological method", *Qualitative Research in Psychology*, Vol. 11 No. 2, pp.211-227.
- Stieglitz, N., Knudsen, T. and Becker, M.C. (2016), "Adaptation and inertia in dynamic environments", *Strategic Management Journal*, Vol. 37 No. 9, pp.1854-1864.
- Tagiuri, R. and Davis, J. (1996), "Bivalent attributes of the family firm", *Family Business Review*, Vol. 9 No. 2, pp.199-208.

- Tilson, D., Lyytinen, K. and Sørensen, C. (2010), "Research commentary—Digital infrastructures: The missing IS research agenda", *Information systems research*, Vol. 21 No. 4, pp.748-759.
- Ucaktürk, A., Bekmezci, M. and Ucaktürk, T. (2011), "Prevailing during the periods of economical crisis and recession through business model innovation", *Procedia-Social and Behavioral Sciences*, Vol. 24 No., pp.89-100.
- van Essen, M., Strike, V.M., Carney, M. and Sapp, S. (2015), "The resilient family firm: Stakeholder outcomes and institutional effects", *Corporate Governance: An International Review*, Vol. 23 No. 3, pp.167-183.
- Veil, S.R. (2011), "Mindful learning in crisis management", *The Journal of Business Communication* (1973), Vol. 48 No. 2, pp.116-147.
- Venkatesh, V., Morris, M.G., Davis, G.B. and Davis, F.D. (2003), "User acceptance of information technology: Toward a unified view", *MIS quarterly*, Vol. No., pp.425-478.
- Villalonga, B. and Amit, R. (2010), "Family control of firms and industries", *Financial Management*, Vol. 39 No. 3, pp.863-904.
- Wang, J. (2008), "Developing organizational learning capacity in crisis management", *Advances in developing human resources*, Vol. 10 No. 3, pp.425-445.
- Ward, J.L. (1997), "Growing the family business: Special challenges and best practices", *Family business review*, Vol. 10 No. 4, pp.323-337.
- Wenzel, M., Stanske, S. and Lieberman, M.B. (2020), "Strategic responses to crisis", *Strategic Management Journal*, Vol. No.
- WHO (2020) Novel Coronavirus (2019-nCoV) SITUATION REPORT - 1. In Organisation, W.H. (editor, *Novel Coronavirus*: World Health Organisation.
- WHO (2020) Novel Coronavirus (2019-nCoV) SITUATION REPORT - 5. In Organisation, W.H. (editor, *Novel Coronavirus*: World Health Organisation.
- WHO (2020) Novel Coronavirus (2019-nCoV) SITUATION REPORT - 11. In Organisation, W.H. (editor, *Novel Coronavirus*: World Health Organisation.
- WHO (2020) Novel Coronavirus (2019-nCoV) SITUATION REPORT - 51. In Organisation, W.H. (editor, *Novel Coronavirus*: World Health Organisation.
- WHO (2020) Novel Coronavirus (2019-nCoV) SITUATION REPORT - 63. In Organisation, W.H. (editor, *Novel Coronavirus*: World Health Organisation.
- Witte, E. (1981), "Die Unternehmenskrise—Anfang vom Ende oder Neubeginn", *Unternehmenskrisen—Ursachen, Früherkennung, Bewältigung*, Stuttgart, Vol. No., pp.7-24.
- Xi, J.M., Kraus, S., Kellermanns, F. and Filser, M. (2015), "Mapping the field of family business research: past trends and future directions", *International Entrepreneurship and Management Journal*, Vol. 11 No. 1, pp.113-132.
- Yin, R.K. (2017) *Case study research and applications: Design and methods*, Sage publications.
- Yin, R.K. (2013), "Validity and generalization in future case study evaluations", *Evaluation*, Vol. 19 No. 3, pp.321-332.
- Zhu, N., Zhang, D., Wang, W., Li, X., Yang, B., Song, J., Zhao, X., Huang, B., Shi, W. and Lu, R. (2020), "A novel coronavirus from patients with pneumonia in China, 2019", *New England Journal of Medicine* (in press).

¹ Main sources (Media): *Der Spiegel*, *Der Standard*, *Handelszeitung*, *Irish Times*, kn-portal, *Neue Westfälische*, *New York Times*, *Stuttgarter Zeitung*, *Südwestrundfunk*; Company websites: Armani, Fiat Chrysler Automobiles, Johns Hopkins University, Melitta, Sennheiser.